REMARKS

In the Office Action, claims 1-11 and 14-20 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,626,569 to Waitkus *et al.* ("Waitkus"). Claims 1-20 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,503,652 to Reynolds III *et al* ("Reynolds").

Turning first to Waitkus, this patent teaches the use of a grafted phenolic resin as a binder in fuel cell systems and all examples contain hexamethylenetetraamine, $(CH_2)_6N_4$. Table A of the Waitkus patent discloses that none of the resins functioned properly in the complete absence of the hexamethylenetetramine. Specifically, many molding problems were encountered such as the formation of porous plates. See column 29 of Waitkus and also see Examples XX –XXIX of U.S. Patent No. 4,668,496 of Korb *et al.*, which was also cited in the Office Action. Thus, Waitkus suggests that hexamethylenetetramine (a nitrogen containing compound) is critical to forming plates.

In contrast, the present specification points out the problems with nitrogen-containing compounds, and the invention solves this problem by way of a binder that is essentially free of nitrogen-containing compounds. Attention is directed to all of the present claims which recite this feature of the present invention. Also, the alkylidenebisphenol based resoles taught in the instant application are neither specifically mentioned nor generally alluded to in the Waitkus patent. Thus, they are clearly not anticipated and certainly were not expected to be free of the problems cited. Hence the use of these bisphenols as precursor materials in the formation of the resoles of the instant application is anticipated and was unexpected. Accordingly, it is

respectfully submitted that the elements of claims 1-20 are not disclosed or suggested in the Waitkus patent.

Referring now to Reynolds, this patent employs liquid resins to place a coating on or slightly impregnate a sheet composed of "Expanded Graphite Particles". It is necessary that the resin be of low viscosity. See column 12, line 53 as well as claim 18 of Reynolds. All of the binders recited in the present claims are solid materials and are mixed with unexpanded graphite and melt compounded to spread the resole on the graphite particles (see, for example, claim 14 of the present application). This is of importance as trace amounts of solvent trapped in the graphite can cause undesirable pin holes in fuel cell separator plates. Accordingly, it is respectfully submitted that the elements of claims 1-20 are not disclosed or suggested in the Reynolds patent.

The Office Action also points out that the word bisphenol-A is used at column 8, line 43 of Reynolds. The Applicant wishes to make it clear that this recitation in Reynolds is in conjunction with the resin type Bisphenol A (DGEBA) not a phenolic. This term in parenthesis is an abbreviation of the specific type of Bisphenol A epoxy. Specifically, (DGEBA) is an industry accepted abbreviation for DiGlycidy Ether of Bisphenol-A. The patent is, therefore, discussing the use of this type epoxy as a suitable coating material rather than referring to the specific type of phenolic resin as taught in the present application. This is further evidence that the present claims are not disclosed or suggested in the Reynolds patent.

Conclusion

Therefore, it is respectfully submitted that the application is in condition for allowance.

No fees are believed to be needed for this amendment. However, if additional fees are needed, please charge them to Deposit Account No. 17-0055.

Respectfully submitted,

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By: _____

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